

GRACHEV V. T.

Acc. Nr:

AP0049792

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

112 073

101747r Modification of poly(vinyl chloride) fibers by allylchlorosilanes. Vol't, I. A.; Besprozvannykh, A.; Podlesnyy, N. K.; Kellmerko, I. P.; Shelkhanov, S. G.; Grachev, V. T. (USSR). *Khim. Volokna* 1970, (11), 76-7 (Russ.). Poly(vinyl chloride) (I) fibers were given water repellency by dehydrochlorination in the presence of FeCl₃ or diazoaminobenzene (II) catalyst followed by treating with Me₃SiCl (III), Me₂SiCl₂ (IV), or MeSiCl₃ (V) to give modified I having increasing Si content with increasing double bond content and amt. of Cl in the silanes. I fibers were dehydrochlorinated in the free state with 6% II and alc. by heating 18-20 hr at 90-100° or in the fixed state at 130° for 10-15 hr with II or 0.5-1 hr with 20% FeCl₃ soln. After removing from the catalyst bath (with bath ratio 40) and drying to 3-7% catalyst add-on, the fibers were impregnated with the silanes, e.g. with a bath contg. 2-10% V (bath ratio 30) for 10-15 min at 20°, heated in air 2-5 hr at 90-130°, exhd. for 1 day with benzene, and washed 5 times with H₂O or 1.5 times with increasing silane concn. in the bath, temp., and length of treatment. Although V gave the highest Si content, V gave the best water repellency as detd. by contact angle measurements. Si addn. to I was by Si-O-C bonds as well as by Si-C bonds. BCJR

REEL/FRAME

19801714

USSR

UDC: 621.315.592

GLORIOZOVA, R. I., GRACHEV, V. M., and KOLESHNIK, L. I., State Scientific-Research and Design Institute for Rare Metal Industries, Moscow

"Electrical Characteristics of n-Type GaP Grown from Melts Containing Oxygen"

Leningrad, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1623-1625

Abstract: Results are given of experiments performed on n-type GaP grown from melts of nonstoichiometric alloys containing oxygen. A number of phenomena accompanying the alloying of GaP by oxygen that are not directly connected with oxygen donor action were detected during the experimentation. The specimens were GaP crystals doped with tellurium, or oxygen, or both combined. The oxygen doping was done by adding Ga_2O_3 in quantities of 0 to $2.5 \cdot 10^{-1}$ molecular % to the melt. A table is given of the electrical parameters of the investigated crystals. It was found that in the specimens grown from melts containing both tellurium and oxygen, there was a substantial increase in Te ionization energy which is probably

1/2

USSR

GLORIOZOVA, R. I., et al, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1623-1625

connected with a reduction in the degree of compensation of the crystals. Curves are plotted for Te ionization energy as a function of donor concentration, and for the degree of compensation in n-type GaP crystals, the low end of the band spectral radiation from n-p junctions, and the photoluminescence intensity as functions of the Ga_2O_3 content in the melts. The authors express their gratitude to M. G. Mil'vidskiy for his comments.

2/2

- 22 -

Immunology

USSR

UDC 615.371.078

VASIL'YEVA, I. G., SEMENOV, V. F., GRACHEV, V. P., and POPOVA, V. D., Central Institute for the Advanced Training of Physicians, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medicine USSR

"Potential Evaluation of Vaccines on the Basis of Autoantibody Formation"

Moscow, Laboratornoye Delo, No 6, 1972, pp 368-369

Abstract: Investigations were conducted with nine commercial vaccines to determine whether autoantibodies are a possible complication in vaccine reactions. Experimentally, smallpox was introduced into scarified skins of rabbits, while 200-300 g guinea pigs received subcutaneously 1 ml of Vi antigen, measles vaccine, live polio virus, typhoid vaccine, NIISI vaccine, Fermi's (rabies) vaccine, monovalent pertussis vaccine, or AKDS vaccine. When tested with autologous erythrocytes, the results showed that the smallpox vaccine caused the appearance of autoantibody in all 15 rabbits immunized. Measles, polio, typhoid, and NIISI elicited the appearance of antierythrocyte antibody in 21%, 33%, 50%, and 58% of the guinea pigs immunized, respectively. Only the Vi antigen vaccine did not induce the formation of autoantibodies. In the case of the polio and measles vaccines autoantibodies appeared in 2-3 weeks and persisted until the 30th postimmunization day. Autoantibodies to erythrocytes disappeared in 1.5 months in animals immunized with Fermi's or smallpox vaccines,

1/2

USSR

VASIL'YEVA, I. G., et al., Laboratornoye Delo, No 6, 1972, pp 368-369

while persisting for over 8 weeks in NIISI immunized animals. In addition, all animals formed antiliver antibodies; furthermore, Fermi's vaccine, monovalent pertussis, and AKDS elicited antibodies against splenic tissue. Autoantibodies against the kidney were induced by Fermi's, NIISI, and AKDS vaccines, antibodies against the heart were formed by animals immunized with Fermi's vaccine and AKDS, antibodies against lung tissue were formed by animals immunized with AKDS and monovalent pertussis vaccine, and antibodies against the brain were formed by guinea pigs immunized with Fermi vaccine. The data indicate that the formation of autoantibodies following vaccination is a real phenomenon and constitutes an important parameter in the evaluation of vaccine reaction.

2/2

USSR

GRACHEV, Yu.

"Scalpel and Oxygen"

Moscow, Sotsialisticheskaya Industriya, 25 Jun 71, p 4

Abstract: Two medical innovations are briefly discussed; an electronic scalpel, and a chamber for keeping patients in a pressurized enriched oxygen environment. The scalpel operates on a high frequency current. A cutter made from a special type of steel is attached to a handle. A narrow tube runs to an electronic apparatus. The device is operated by a foot pedal. The electrode not only cuts, but also cauterizes. It thus makes operations almost bloodless. The inventors of this device (developed at the All Union Scientific Research Institute for Surgical Apparatus and Instruments) do not claim that it is completely original. However, it is the first domestically produced device that can both cut and cauterize simultaneously, or perform each operation separately.

The second piece of equipment was also developed by specialists at the Institute. It looks somewhat like the nose of a jet airplane. The patient is placed inside.

1/2

USSR

GRACHEV, Yu., Sotsialisticheskaya Industriya, 25 Jun 71, p 4

It has viewing windows and a speaker system. It is useful in cases such as electric shock and drowning, as well as certain other diseases and injuries, where the body's ability to assimilate oxygen is impaired. The specialists have also developed and tested an attachment to warn of excessive and toxic supplies of oxygen.

2/2

- 56 -

1/3 030 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--FEATURE ARTICLE ON METEOR SYSTEM. THE METEOR SYSTEM -U-

AUTHOR--POPOV, YE.G., BELOUSOV, S.L., LEONOV, N.G., CHETVERNIKOV, I.A.,
GRACHEV, YU.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SOTSIALISTICHESKAYA INDUSTRIYA, 1 FEBRUARY 1970, P 4

DATE PUBLISHED--01FEB70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--METEOROLOGIC SATELLITE, PHOTOGRAPH, METEOROLOGIC STATION,
UNMANNED ORBITAL LABORATORY, SPACEBORNE EARTH PHOTOGRAPHY, WEATHER
CHART, METEOROLOGIC DATA, COMPUTER APPLICATION/(U)METEOR METEOROLOGIC
SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/1743

STEP NO--UR/0533/70/000/000/0004/0004

CIRC ACCESSION NO--AN0104926

UNCLASSIFIED

2/3 030

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0104926

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SPACE METEOROLOGICAL STATION IN A CIRCUMTERRESTRIAL ORBIT CAN DAY AND NIGHT TRANSMIT WEATHER DATA MAKING IT POSSIBLE TO WARN THE COUNTRY OF IMPENDING DANGEROUS METEOROLOGICAL PHENOMENA. THE INFORMATION IS TRANSMITTED IN THE FORM OF PHOTOGRAPHS. THESE PHOTOGRAPHS CLEARLY PINPOINT THE LOCATION OF STORMS AND THEIR DIRECTION. THE HYDROMETEOROLOGICAL CENTER USSR IS EVEN NOW RECEIVING SUCH INFORMATION FROM A WHOLE SERIES OF METEOR SATELLITES. CREATED ON THE BASIS OF THE LATEST ADVANCES IN SOVIET SCIENCE, IT IS OF THE GREATEST SERVICE IN COMPILING BOTH LONG AND SHORT RANGE FORECASTS. HOWEVER, ALL THIS REQUIRES WELL TRAINED GROUND PERSONNEL, SINCE POOR INTERPRETATION OF THE PHOTOGRAPHS WOULD CANCEL OUT THIS NEW SOPHISTICATED SOURCE OF INFORMATION. A SPECIAL SECTION AT THE HYDROMETEOROLOGICAL CENTER HANDLES SUCH WORK; IT HAS THE RATHER ROMANTIC NAME OF SATELLITE VERTICAL. THE SECTION IS MANNED BY DEDICATED PIONEERS IN THIS NEW BRANCH OF METEOROLOGY. ALL SATELLITE DATA MUST BE CORRELATED WITH GROUND DATA FOR COMPILING MAPS OF CLOUD COVER DISTRIBUTION. THE COMPLEX TASK OF INTERPRETING PHOTOGRAPHS CANNOT YET BE AUTOMATED. HOWEVER, PROCESSING OF DATA ON RADIATION FLUXES IS COMPLETELY AUTOMATED. A SPECIAL PROGRAM DEVELOPED AT THE CENTER ENSURES THAT COMPUTERS CAN HANDLE THE VAST AMOUNT OF DATA ON RADIATION IN A VERY SHORT TIME. THE VOLUME OF RADIATION DATA RECEIVED FROM SATELLITES EXCEEDS THAT WHICH IS RECEIVED FROM GROUND STATIONS THROUGHOUT THE COUNTRY. SATELLITE DATA ARE SORTED BY COMPUTER BY TYPES: SOLAR RADIATION, LIGHT REFLECTED BY THE EARTH, RADIATION OF THE EARTH ITSELF, ENERGY OF ELECTROMAGNETIC WAVES.

UNCLASSIFIED

3/3 030

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AN0104926

ABSTRACT/EXTRACT--USING THESE DATA THE MACHINE CAN COMPUTE THE ALTITUDE OF THE UPPER CLOUD BOUNDARY, THE RADIATION TEMPERATURE OF SEAS, THE ATMOSPHERE AND DIFFERENT CONTINENTS. THE VOLUME OF DATA RECEIVED BY THE HYDROMETEOROLOGICAL CENTER IS CONSTANTLY INCREASING. HIGH SPEED, HIGH CAPACITY COMPUTERS ARE BEING BROUGHT IN TO HANDLE THE LOAD. IMPROVED FORECASTING ACCURACY WILL INEVITABLY RESULT. (A PHOTOGRAPH ACCOMPANYING THE TEXT SHOWS THE GENERATION OF A LOW PRESSURE SYSTEM OVER THE PACIFIC OCEAN TAKEN FROM AN ALTITUDE OF 650 KM BY THE "METEOR-2" WEATHER SATELLITE ON 15 JANUARY 1970 AT 0100 HOURS MOSCOW TIME).

UNCLASSIFIED

Microbiology

USSR

UDC 614.3/.4.07

RYZHIKOV, M. I., KORZENKO, V. N., and GRACHEV, YU. A., Ministry of Health Belorussian SSR, Republic Sanitary-Epidemiological Station, and Minsk Pedagogical Institute imeni A. M. Gor'kiy

"Some Problems Concerning the Preparation of Bacteriological Laboratories for Detection of Bacterial Substances"

Minsk, Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

Translation: Bacteriological weapons, regarded as one of the most powerful means of mass infection of people, have been accepted as armament by aggressive factions of a number of capitalist states. Foreign investigators consider that the agents of especially dangerous infections such as plague, cholera, glanders, melioidosis, equine encephalomyelitis, and other diseases can be utilized as bacteriological weapons. It is the opinion of foreign specialists that the infection of the earth's atmospheric layers is the most likely and effective method of bacteriological attack.

The identification of the type of agent in the least time is the basis for the implementation of a whole series of measures aimed at localizing and eliminating the developing foci.

The successful elimination of the consequences of infection depends on

1/6

USSR

RYZHIKOV, M. I., et al., Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

the quantity and quality of the studies conducted, and on the participation of a considerable number of laboratories in the defection work.

This is the task that confronts the rayon, municipal, and oblast sanitary epidemiological stations, the bacteriological laboratories of institutes and certain hospitals, and veterinary laboratories of practical and scientific research institute (D. I. Lazarenko, 1968). In view of the fact that the republic is not plagued by highly dangerous infections, no effort to control their agents is made at the laboratories, with the result that most of the laboratories are not equipped to work in the regime required for especially dangerous infections.

For this reason it is considered advisable to adopt beforehand some basic measures for the development of a laboratory. These measures consist of the elaboration of a plan for the development of a laboratory, with provisions for carrying out supplementary work, such as the equipping of additional isolation wards and rooms, erection of partitions and passages, and so on. In addition, reserves of necessary diagnostic preparations and other supplies must be created and facilities organized which make it possible to obtain these supplies at the needed moment. Specialists must be trained to work under pressure conditions and apply methods of investigation appropriate to the required task.

2/ 6

- 16 -

USSR

RYZHIKOV, M. I., et al., Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

General requirements for the organization of a work regimen in separate corresponding laboratories are clarified in the literature (V. N. Fedorov, 1953; P. F. Zdrodovskiy and Zhukov-Verezhnikov, 1966, and others) and there are also instruction materials on plague, cholera, and smallpox. These materials however, fail to treat the work regimen in laboratories which are engaged in complex studies, such as bacteriological and virological investigations (these are not supported by descriptions of the order and stages in which investigations are to be conducted). A summary of literary data on the organization of work at the best laboratories, and the experience accumulated by us in the matter of developing laboratories at appropriate premises permitted us to develop a number of recommendations.

In case it is necessary to launch immediate investigations (delivery of a test sample to the laboratory), a step-wise approach to the work by the different functional sections of the laboratory is advisable which ensures orderly stages in the conduct of the investigations. The premises in which the laboratory is situated are divided into two halves; the infectious and the clean. Then there are sections which make it possible to begin work with a minimum time loss; a room for the primary processing of material and preparation of the test samples for further investigation; an isolation ward

3/6

USSR

RYZHIKOV, M. I., et al., Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

or room for the infection and housing of test animals; and a room to carry out express methods of investigation (boiler room). Located in the second half are the "clean" laboratory, an autoclave for infected material, dissection room, sanitary conveyer, and others. The work in these sections can be carried out by less skilled laboratory personnel working under the supervision of specialists.

The volume of work that can be accomplished at a given laboratory is based on the resources and means which are available. The volume of investigations is determined by the task assigned to the laboratory and the availability of the diagnostic preparations and equipment; at the same time separate calculations are made of the number of test samples that can be investigated by the express, accelerated, and classical methods. On the basis of these calculations, the total number of test samples which can be accepted for investigation in a single work day is determined, taking into account the possibility of grouping some of the test samples.

The completed calculations make it possible to determine the kind and quantity of supplies which should be utilized at each of the investigating stages. A list of instruments, laboratory vessels, reagents, bacterial preparations, and so on is used to provide each of these stages with the

4/6

- 17 -

USSR

RYZHIKOV, M. I., et al., Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

necessary supplies. In the case of a shortage of some of these supplies or the inadvisability of storing them, the list should specify where such supplies may be obtained.

In order to expedite the conduct of investigations, a plan of work for each stage of the investigation and a general plan for the handling of the material delivered to the laboratory should be prepared, because the use of handbooks and manuals in the course of work with especially dangerous infections is difficult and takes up a great deal of time. Such plans necessary for each stage of preparation of the test samples for further investigation at the biological testing premises, pure laboratory, boiling room, and so on.

The plan for the stage in which the test samples are prepared for investigation should anticipate the preliminary processing of the material (trituration, emulsification, filtration, and so on) and its separation into parts for further special processing (centrifugation, filtration through membrane filters, heating, and so on). The plan should indicate also the separate work stages for each part of the test sample: preparation of smears, quantity, staining methods, and nutrient media to be used; it should also indicate the species and number of laboratory animals used and the methods of infection; also the type of material, the time it is examined, the kind

5/6

USSR

RYZHIKOV, M. I., et al., Zdravookhraneniye Belorussii, No 1, Jan 71, pp 67-69

of medium used for reinoculation, and the time at which the reinoculation is done.

Particular attention should be given to the composition and preparation of nutrient media, the order of their completion, and delivery in accordance with the investigating plan. Brief instructions outlining the order at which the work is to be done should be available at all stages.

Practical work habits for each state of the investigation are being developed in the course of the training instructions. The completion of the preparations and the development of the laboratory in accordance with the plan and taking into consideration local characteristics will help in the proper organization of work at the most critical period -- the initial 1-2 hours after receipt of the assignment to detect bacterial substances.

6/6

- 18 -

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SCME OBSERVATIONS ON THE EFFECTIVENESS OF MONOMYCIN IN THERAPY OF
GONORRHEA IN MEN -U-
AUTHOR--(05)-GRIGORYEV, V.YE., POTAPNEV, F.V., SKURATOVICH, A.A., GRACHEV,
YU.I., VOSKRESENSKAYA, G.A.
COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 59-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, VENEREAL DISEASE, MONOMYCIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0936

STEP NO--UR/0206/70/000/004/0059/0062

CIRC ACCESSION NO--AP0109093

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 012

CIRC ACCESSION NO--AP0109093

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECTIVENESS OF MONOMYCIN IN THERAPY OF GONORRHEAL INFECTION IN 145 MEN WAS STUDIED. THE DRUG WAS INJECTED INTRAMUSCULARLY IN A DOSE OF 500,000 UNITS EVERY 10-12 HOURS. PATIENTS WITH ACUTE AND SUBACUTE GONORRHEAL URETHRITIS RECEIVED A COURSE DOSE OF MONOMYCIN OF 2,000,000 UNITS. FOR PATIENTS WITH COMPLICATED AND CHRONIC FORMS OF GONORRHEAL INFECTION COURSE DOSES WERE INCREASED TO 3,500,000-4,000,000 UNITS. GONOCOCCI DISAPPEARED FROM THE SECRETE IN THE MAJORITY OF PATIENTS WITHIN 6-7 HOURS. ETIOLOGICAL CURE AFTER MONOMYCIN THERAPY WAS ACHIEVED IN 96.6PERCENT OF PATIENTS. FACILITY: OTDEL GONOREI TSENTRAL'NOGO N I KOZHNO VENEROLOGICHESKOGO INSTITUTA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

USSR

UFE 621.762.002.5(038.8)

MEL'NIKOV, V. N., TRET'YAKOV, V. I., YEMEL'YANOVA, M. D., MUKHAMEDZHANOV, A. K., KAMENSKAYA, D. S., MORGUN, G. N., CHAVRIKOV, M. G., and GRACHEV, Yu. S..

"Rotating Electrical Furnace for Production of Metallic Powders"

USSR Author's Certificate No 267823, Filed 23/06/66, Published 23/07/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 C477 P)

Translation: The furnace includes a hopper, loading and unloading chambers with worms, a body, rotating tube, and a device for removal of the layer of powder accumulating on the surface of the tube. In order to increase productivity of the process and improve working conditions, the device for removal of the powder layer from the surface of the tube is firmly fastened in the working space of the tube so that its leading edge is located parallel to its axis and its working face is at an angle to the radius. The device is attached to parts of the loading and unloading chambers.

1/1

- 39 -

Biochemistry

USSR

UDC 547.964.4+577.17

(11)

SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUYSKAYA, YE. N.,
RYABTSEV, M. N., KRIVTSOV, V. F., GRACHEVA, A. K., KRASHCHENKOV, S. P.,
NOVCOSELOV, V. A., GRUZDEV, V. S., OLEYNIK, A. M., KALINKINA, Z. B., FEDOTOV,
V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method [R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdofazny sintez peptidov, Moscow, Mir, 1971] and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent [A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966]. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-
1/2

USSR

SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

2/2

- 4 -

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--IMMEDIATE RESULTS OF TREATMENT WITH PENICILLIN AND BISMUTH DRUGS OF
PATIENTS WITH CONTAGIOUS FORMS OF SYPHILIS -U-
AUTHOR-(02)-VASILYEV, T.V., GRACHEVA, G.K.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 50-55

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, VENEREAL DISEASE, BISMUTH COMPOUND, BLOOD SERUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1990/0937

STEP NO--UR/0206/70/000/004/0050/0055

CIRC ACCESSION NO--AP0109094

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS OBSERVED 106 PATIENTS WITH CONTAGIOUS FORMS OF SYPHILIS WHO WERE TREATED SIMULTANEOUSLY WITH PENICILLIN AND BISMUTH DRUGS (BIYOQUINOL, BISMOVEROL). GOOD TOLERABILITY OF THE TREATMENT, MORE RAPID REGRESSION OF SYPHILIDS, MORE RAPID NEGATIVATION OF SEROLOGICAL TESTS OR A REDUCTION OF THE TITER OF REAGINS WERE OBSERVED. IN DETERMINATIONS OF CONCENTRATION OF THE ANTIBIOTIC IN THE BLOOD SERUM OF PATIENTS RECEIVING PENICILLIN SIMULTANEOUSLY WITH BIYOQUINOL IT WAS FOUND TO PERSIST AT A THERAPEUTIC LEVEL (0.06 UN-ML) BY THE END OF THE THIRD HOUR AFTER NEXT INJECTION. THIS METHOD OF TREATMENT SHORTENS THE PERIOD OF HOSPITALIZATION BY 2-3 WEEKS AND CURTAILS THE TIME OF TREATMENT. FACILITY: OTDEL SIFILIDCLOGII TSENTRAL'NOGO N I KOZHNO VENEROLOG, INSTITUTA MINISTERSTVA ZDRAVOUKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 539.18

MOROZOV, V. N., POPYALKOVSKAYA, L. K., GRACHEVA, G. P., and KREST'YANINOV, A. G.

"Calculation of Degree of Calcium Atomization in Acetylene-Air and Propane-Butane-Air Flames"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 18, No 1, Jan 73, pp 17-22

Abstract: The article calculates the partial pressures of calcium compounds in an acetylene-air and a propane-butane-air flame under various combustion modes characterized by the air volume-hot gas volume ratio V_{air}/V_{gas} or the quantity C/O in the hot mixture, and on the basis of the results he calculates the degree of atomization. The dependence of the degree of atomization on the composition of the hot mixture, the quantity of water solvent introduced into the flame, and the calcium concentration of the solution is calculated.

1/1

USSR

UDC 681.325.65

LASTOCHKIN, N. K., GRACHEVA, I. I., TKACH, I. I.

"Some Problems in Automating Experimental Investigations of the Parameters of Analog-Digital and Digital-Analog Converters"

Novosibirsk, Konf. po avtomatiz. nauch. issled. na osnove primeneniya EVM, 1972--sbornik (Conference on Automating Computer-Based Scientific Research, 1972--collection of works), 1972, pp 97-101 (from RZh-Avtomatika, Teleme-khanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B302)

Translation: It is noted that most parameters of converters are functions of random quantities, and therefore their determination requires statistical methods which can be completely realized only when fully automated systems are used. The particulars and principles of organization of automated systems for measuring parameters are considered. Bibliography of five titles. L. P.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE EFFECT OF TEMPERATURE OF FERMENTATION ON THE PRODUCTION OF
HIGHER ALCOHOLS BY THE YEAST SACCHAROMYCES CARLSBERGENSIS -U-
AUTHOR--(04)-GRACHEVA, I.M., VESELOV, I.YA., GAVRILOVA, N.N., KOVALEVICH,
L.S.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 322-326
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FERMENTATION, ALCOHOL, YEAST, SACCHAROMYCES, CARBOHYDRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1408 STEP NO--UR/0220/70/039/002/0322/0326
CIRC ACCESSION NO--AP0054271
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMPERATURE WAS FOUND TO BE AN IMPORTANT FACTOR IN THE PRODUCTION OF BY PRODUCTS BY SACCH. CARLSBERGENSIS XI DURING FERMENTATION, E.G. ON ACCUMULATION OF HIGHER ALCOHOLS, THE DEGREE OF CARBOHYDRATE FERMENTATION TO ETHANOL BEING ALMOST THE SAME. THE TOTAL CONCENTRATION OF HIGHER ALCOHOLS RISED 1.95 FOLD WHEN TEMPERATURE OF FERMENTATION WAS INCREASED FROM 2DEGREES TO 20DEGREES. THE FOLLOWING INCREASE OF TEMPERATURE UP TO 30DEGREES RESULTED IN A DECREASE OF HIGHER ALCOHOLS 3.6 FOLD, MAINLY AT THE ACCOUNT OF ISOAMYL ALCOHOL. THE ACCUMULATION OF ISOBUTYL AND N-PROPYL ALCOHOLS WAS NOT MUCH AFFECTED BY TEMPERATURE. THEIR MAXIMAL CONCENTRATION WAS REGISTERED AT 23 TO 25DEGREES.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SYNTHESIS AND PROPERTIES OF GAMMA (S-(6, MERCAPTOPYRYL) ALPHA BENZYL
N BENZYLOXYCARBONYL GLUTAMIC ACID AND GAMMA (9, (6, METHYLTHIOPYRYL) ALPH;
AUTHOR-(03)-VEYNBERG, A.YA., GRACHEVA, I.N., SAMOKHVALOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 484-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ACID, GLUTAMIC ACID, BENZENE DERIVATIVE, CARBONYL
COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/2016

STEP NO--UR/0079/70/040/002/0484/0487

CIRC ACCESSION NO--AP0120659

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 1 G
1,BENZYL-N-BENZYLOXYCARBONYL L-GLUTAMIC ACID (I) IN ME SUB2 NCHO WITH
0.4 G 6,MERCAPTOPURINE AND 0.56 G N,N PRIME DICYCLOHEXYLCARBODIIMIDE
GAVE IN 1 DAY AT 20DEGREES 57PERCENT 4,(S-(6,MERCAPTOPURYL))
ALPHA-BENZYL-N BENZYLOXYCARBONYL-L-GLUTAMIC ACID, DECOMPG. 204-6DEGREES
(ALPHA) PRIME20 SUBD MINUS 8.4DEGREES. TREATING I WITH ETO SUB2 CCL IN
ME SUB2 NCHO-ET SUB3 N, FOLLOWED BY 6,(METHYLTHIO)PURINE AT MINUS 10 TO
MINUS 15DEGREES INITIALLY, THEN 1 DAY AT MINUS 5DEGREES, GAVE 61PERCENT
4,(9,(6,METHYLTHIOPURYL)),1,BENZYL-N BENZYLOXYCARBONYL-L-GLUTAMIC ACID,
M. 112-14DEGREES, (ALPHA) PRIME20 SUBD MINUS 6.1DEGREES. THE FORMER O
THE LATTER TREATED WITH DIBENZYL L-GLUTAMATE IN MECN 5-8 HR GAVE DIBEZY
1,BENZYL-N-BENZYLOXYCARBONYL-L-GLUTAMYL-L-GLUTAMATE, M. 238-9DEGREES,
ALSO PREPD. IN 41PERCENT YIELD FROM I AND ETO SUB2 CCL IN ET SUB3
N-P-DIOXANE TREATED WITH DIBEZYL GLUTATATE-HCL. FACILITY: VSES
NAUCH.-ISSLED. VITAM. INST., MOSCOW, USSR.

UNCLASSIFIED

Epidemiology

USSR

UDC 616.988.5-053.2-036.15-036.22

SIGAYEVA, L. A., NEGINA, A. I., and GRACHEVA, K. G., First Moscow Medical Institute imeni Sechenov and Sanitary Epidemiological Station of the Fourth Main Administration

"The Role of Adenoviruses in the Development of Group Diseases Among Children"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 140-144

Abstract: Investigations were performed during two outbreaks of upper respiratory diseases: among nursery children aged 1-3 in Nov-Dec 1966, and among hospitalized children aged 3-11 in Feb-Mar 1968. In each group, the outbreak was precipitated by a child with an acute respiratory infection and lasted 21-23 days, involving 14 out of the 19 nursery children and 15 out of the 16 hospitalized children. The disease had an acute onset with fever, inflammation of nasal and pharyngeal mucosa, and sometimes vomiting and diarrhea; the course was mild and recovery complete. Adenovirus type 5 was identified in nose and throat smears of all sick children but was no longer found after recovery. Titers of complement-fixing antibodies were significantly elevated (1:40-1:160) even on the 30th day after the onset of the disease. Adult personnel taking care of the children remained well, and serological and virological tests yielded negative results in all cases.

1/1

USSR

UDC 575.1 576.809.51 578.088.91

GRACHEVA, L. M., and KOROLEV, V. G., Physicotechnical Institute imeni
A. F. Ioffe, Academy of Sciences USSR

"Biological Consequences of the Decay of Radioactive Phosphorus Incorporated
Into the Cells of Microorganisms"

Moscow, Uspekhi Sovremennoy Biologii, Vol 72, No 1(4), 1971, pp 143-158

Abstract: The article is a review of literature (43 references) on the lethal, mutagenic, and recombination effects of P^{32} incorporated in the intracellular structures of various microorganisms: phages, bacteria, and fungi. Literature data on the restoration of single strand and double strand breaks induced by the decay of incorporated P^{32} are discussed. On the basis of analyses of the biological and chemical consequences of the radioactive decay of P^{32} , an outline of the lethal and nonlethal changes which may be produced in the structure of DNA is proposed.

1/1

- 23 -

1/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--RADIOACTIVE COLLOIDAL SOLUTIONS FOR BETATHERAPY -U-

AUTHOR--(03)-MIKHEYEV, N.B., GRACHEVA, M.N., SERYY, S.V.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 74-78

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, NUCLEAR SCIENCE AND
TECHNOLOGY

TOPIC TAGS--YTTRIUM, BETA RADIATION, COLLOID, ISOTOPE, YTTRIUM COMPOUND,
PHOSPHORUS ISOTOPE, RADIATION BIOLOGIC TISSUE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1514

STEP NO--UR/0241/70/015/006/0074/0078

CIRC ACCESSION NO--AP0128909

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS HAVE ELABORATED METHODS OF OBTAINING RADIOACTIVE COLLOIDAL SOLUTIONS OF YTTRIUM SILICATE WITH Y PRIME90 CIRCONIUM PHOSPHATE WITH P PRIME32 AND CHROMIUM PHOSPHATE WITH P PRIME32. SPECIAL ATTENTION IS PAID TO THE STABILITY OF COLLOIDAL SOLUTIONS. THE AUTHORS CONDUCTED BIOLOGICAL TRIALS OF THE PREPARATIONS OBTAINED WHICH DEMONSTRATE THAT THEY SATISFY THE REQUIREMENTS TO PREPARATIONS FOR INTRATISSULAR BETATHERAPY. FACILITY: INSTITUT BIOFIZIKI MZ SSSR.

UNCLASSIFIED

USSR

UDC 599.537:591.422.1

GRACHEVA, M. S., Chair of Human Anatomy, First Medical Institute of Moscow

"Several Features in the Structure of the Larynx of the Bottle-Nosed Dolphin
(Tursiops truncatus)"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 10, 1971, pp 1539-1545

Abstract: The larynx cavity of this dolphin is divided into 3 parts (vestibulum laryngis, rima glottidis, cavum infraglotticum), each of which contribute to the sealing of the organ against water and the harmful impurities of an excessive air intake. The vallate lips above the aditus laryngis, in conjunction with a sphincter and the pressing of the epiglottis against the upper edge of the arythenoid cartilage, compress the opening to the larynx. The absence of muscles in the mucous membrane of the arythenoid-epiglottic folds is necessary since the folds must be very thin in order to close the larynx and since, unlike land mammals, the breathing and eating passages in dolphins must be separated. Although the vibration of the cartilage and the subsequent movement of the vocal processes can produce sounds, the absence of muscles testifies to the impossibility of lowering the tone because the folds cannot thicken; they can only become thinner when the walls of the sub-ligamentous cavity are stretched. The vocal folds are a continuation of the vocal processes and are 1/2

USSR

GRACHEVA, M. S., Zoologicheskii Zhurnal, Vol 50, No 10, 1971, pp 1539-1545

created by a doubling-up of the mucous membrane, which extends from the top of the vocal process to the ventral wall of the larynx. In these vocal folds are bundles of densely-packed tissue composed of collagen and elastic tissue. In the second part of the larynx cavity is the vocal slit (r. glottidis) which is primarily intercartilagenous tissue and only one-tenth vocal membrane. During breathing the membranous part distends while the vocal folds become tense and lengthen. In the pits between the folds of the ventral wall (as well as in the vestibule and mucous membrane) are accumulations of lymphatic and glandular tissues which act as air barriers. Excessive air intake dries the mucous membrane which moistens glandular secretions, and its harmful effects must be neutralized by the lymphatic apparatus.

2/2

- 54 -

Acc. Nr.: AT0042698

G

Ref. Code: 74801

JPRS 5.

Dispersion of "Strong" Fluctuations of Laser Beam Intensity

(Abstract: "Measurements of the Dispersion of 'Strong' Fluctuations in the Intensity of Laser Radiation in the Atmosphere," by M. Ye. Grachova, A. S. Gurvich and M. A. Kallistratova, Institute of Physics of the Atmosphere; Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIII, No 1. 1970, pp 56-60)

This paper gives the results of measurements of the mean square values of "strong" fluctuations of the logarithm of intensity of plane and spherical light waves propagating on horizontal paths 250 and 1,750 m long for high values of the structural constant of fluctuations of the atmosphere refractive index C_n ($C_n \approx 1.5 \cdot 10^{-7} \text{cm}^{-1/3}$). The light source was a gas laser ($\lambda = 0.63 \mu$), operating in a regime of axial oscillations with a high-quality collimator (D of aperture = 50 cm). A point detector was used. A study was made of the dependence $\sigma_I = f(2\sigma_0)$, where σ_0 is the mean square value of fluctuations of the logarithm of wave amplitude, computed by the smooth perturbations method. For plane and spherical waves, as well as for white light, there is a σ_I maximum when $\sigma_0 \sim 1$. With a further increase in σ_0 there is a slow decrease in σ_I . The maximum σ_I value for a spherical wave is greater than for a plane wave.

Reel/Frame
19760805

21

Acc. Nr.: A70042697Ref. Code: UR0141

JPRS 50162

Amplitude of Light Wave During Propagation in Turbulent Atmosphere

(Abstract: "Measurements of the Mean Level of the Amplitude of a Light Wave During Propagation in a Turbulent Atmosphere," by M. Ye. Gracheva, A. S. Gurvich and M. A. Kallistratova, Institute of Physics of the Atmosphere; Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol. XIII, No 1, 1970, pp 50-55)

The authors describe the method and present the results of measurements of the mean logarithm of the amplitude $\langle X \rangle$ of a plane light wave propagating on horizontal paths 250 and 1,750 m in length in the surface layer of the atmosphere. The light beam from a helium-neon gas laser ($\lambda = 0.63 \mu$) was broadened by a high-quality collimator to a diameter of 50 cm. It was demonstrated that with the method used the effect of atmospheric absorption on the measured $\langle X \rangle$ value is eliminated. The authors determined the dependence of $\langle X \rangle$ on the parameter σ_0 , representing the dispersion of the fluctuations of the logarithm of wave amplitude, computed by the smooth perturbations method, as well as the dependence of $\langle X \rangle$ on the simultaneously measured dispersion of fluctuations of the logarithm of amplitude

Reel/Frame

19760803

12

AT0042697

$$\sigma_{\chi}^2 = \langle (\chi - \langle \chi \rangle)^2 \rangle.$$

These data show that the expression $\langle \chi \rangle = -\sigma_{\chi}^2$, found theoretically for the region of "weak" fluctuations, that is, for $\sigma_0 < 1$, remains correct for "strong" fluctuations as well. There is a contradiction between the presented data and the hypothesis of a Rayleigh distribution of amplitude fluctuations in the region $\sigma_0 \gg 1$.

19760804

di

USSR

UDC 547.587.21

KUKALENKO, S. S., GRACHEVA, N. A., CHILIKIN, L. G.

"Chemistry of Organic Pesticides. III. Synthesis of 4-Phthalimidobutanoic Acid"

Zhurnal Organicheskoi Khimii, vol 9, No 7, July 1973, pp 1401-1404

Abstract: 4-Phthalalimidobutanoic acid was made by reacting gamma-butyrolactone with dry potassium phthalimide at 180-200°C (84% yield). Cis-Tetrahydrophthalimidobutanoic acid was obtained by a similar procedure. A number of esters, acid chlorides, amides, and anilides of the first compound were prepared and their properties determined. Of the products tested, the most active fungicide (against tomato phytoflora) was 4-phthalimidobutanoic monoethylamide.

1/1

- 58 -

Pesticides

USSR

UDC 547.745:541.69

KUKALENKO, S. S., and GRACHEVA, N. A., Scientific Research Institute of Fertilizers and Insectofungicides imeni Prof. Ya. V. SAMOYLOV, Moscow

"A New Synthetic Method for N-Aryl and N-Alkylpyrrolidones and Some of Their Properties"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 773-774

Abstract: A simple method was developed for synthesis of N-aryl and N-alkyl-pyrrolidones based on the reaction of gamma-butyrolactone with primary amine hydrochlorides. The reaction takes place upon heating; equimolar amounts of the starting materials at 60-210° for 4-20 hrs. Aryl derivatives form in 85-98% yield, alkyl products can be obtained in 20-33% yield. The products synthesized were found to have fungicidal activity.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CHELATE ADSORBENTS BASED ON AMINOPOLYSTYRENE AND RESORCINOL AZO
DERIVATIVES -U-
AUTHOR--(03)-YLLISFYEVA, O.P., SAVVIN, S.B., GRACHEVA, R.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(1) 45-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--RESORCINOL, CHELATE COMPOUND, ADSORPTION, FORMALDEHYDE,
ORGANIC NITRO COMPOUND, AMINE, STYRENE, POLYMER, COPPER, NIOBIUM,
URANIUM, LANTHANUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0300 STEP NO--UR/0075/70/025/001/0045/0048
CIRC ACCESSION NO--AP0111494
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NITRATION OF POLYSTYRENE (MOL. WT. SIMILAR TO 1000) GAVE POLY(4-NITROSTYRENE), WHICH WAS REDUCED WITH SN IN HCL SOLN. TO POLY(4-AMINOSTYRENE) (III). THE DIAZO COUPLING OF III WITH 1. 4-(PHENYLAZO)RESORCINOL, 4-(2-HYDROXYPHENYLAZO) RESORCINON, 4-(2-METAARSENATOPHENYLAZO)RESORCINOL, OR 4-(2-PYRIDYLAZO) RESORCINOL GAVE IV (R IS H, PH, 2-HYDROXYPHENYL, 2-METAARSENATOPHENYL, OR 2-PYRIDYL, RESP.). ALL IV CHELATE METALS AND CAN BE USED AS THE SELECTIVE ADSORBENTS FOR CU, U, NB, AND LA. THE ADSORPTION OF THESE METALS VARIES WITH THE PH IN A DIFFERENT MANNER FOR ALL IV. IV (R EQUALS 2-PYRIDYL) ADSORBS 90PERCENT CU AND NB FROM N HCL WHILE UO SUB2 AND LA ARE NOT ADSORBED; IV (R EQUALS H) ADSORBS SIMILAR TO 100PERCENT NB AT PH 1 WHILE CU IS NOT ADSORBED.

UNCLASSIFIED

USSR

UDC: 8.74

KITOV, A. I., GRACHEVA, Ye. K.

"On Using Grammatical Facilities and Data Retrieval Systems
for Large Masses of Documents"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Com-
puter Technology and Programming--collection of works), vyp.
7, Moscow, "Sov. radio", 1972, pp 57-68 (from RZh-Kibernetika,
No 8, Aug 72, Abstract No 8V620)

Translation: The paper describes an informational language
with a grammar used both for improving the accuracy of de-
scription and document retrieval, and for printing out for-
malized sentences in a natural language. Also described are
practically realized algorithms for compiling a lexical dic-
tionary and producing formalized sentences. Authors' abstract.

1/1

- 58 -

USSR

UDC 681.3.06:51

GRACHEVA, Ye. K.

"Problems of Machine Realization of IRS for Large Masses of Documents"

Tsifr. Vychisl. Tekhnika i Programmir. [Digital Computer Equipment and Programming -- Collection of Works], No 6, Moscow, Sovetskoye Radio Press, 1971, pp 41-48, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V602 by the author).

Translation: Problems of organization of the memory of an IRS for large masses of documents are studied, formulas are presented for calculation of the memory distribution indicators for four versions of the system, and these versions are compared. A brief description is presented of a complex of algorithms which process information as the information fund of the system is filled and reflect the specific features of the architecture of the IRS.

1/1

- 57 -

Nitrogen Compounds

USSR

UDC 542.974 + 547.857

GRACHEVA, YE. P., VOLKOVA, Z. S., GUNAR, V. I., ARUTYUNYAN, E. A., and ZAV'YALOV, S. I., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR

"Methods for Activation of Purine and Pyrimidine S-Methylmercapto Derivatives in Reactions With Weakly Nucleophilic Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 420-423

Abstract: The article considers methods for the activation of 6-methylmercaptapurine (I) in reactions with aromatic amines, based on the drawing off of electrons from the sixth carbon atom of I by complexing with Lewis acids and the introduction of an electron-acceptor group into the molecule of I. The Lewis acids studied were HgCl_2 , CuCl_2 , FeCl_3 , BF_3 , ZnCl_2 , CoCl_2 , MnCl_2 and NiCl_2 . The strongest catalytic properties were found in HgCl_2 . The use of HgCl_2 permits a sig-

USSR

GRACHEVA, YE. P., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 420-423

nificant decrease in the reaction time for I with such aromatic amines as aniline and p-chloroaniline. Activation of I in the amination reaction also results from the introduction of an acetyl group in the ninth position of I. Attempts to activate the molecule of S-methyl-6-methyl-2-thiouracil in reactions with nucleophilic compounds were less successful. It was found that $HgCl_2$ does not have any significant catalytic effect on the amination of S-methyl-6-methyl-2-thiouracil with aniline. The alcoholysis of S-methyl-6-methyl-2-thiouracil and S-methyl-2-thiouracil by n-butanol in the presence of $HgCl_2$ and pyridine gives low yields.

2/2

- 25 -

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ACTIVATING METHYLTHIO DERIVATIVES OF PURINE AND PYRIMIDINE IN
REACTIONS WITH WEAKLY NUCLEOPHILIC COMPOUNDS -U-
AUTHOR-(05)-GRACHEVA, YE.P., VOLKOVA, Z.S., GUNAR, V.I., ARUTYUNYAN, E.A.,
ZAVYALOV, S.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 420-3
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--URACIL, PURINE, PYRIMIDINE, HYDROGEN SULFIDE, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1997/0854

STEP NO--UR/0062/70/000/002/0420/0423

CIRC ACCESSION NO--AP0119758

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119758

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 6,METHYLTHIOPURINE (I) AND HGCL SUB2 IN ETOH GAVE A 1:1 COMPLEX, DECOMPD. 215-18DEGREES, WHICH WITH H SUB2 S REGENERATED THE PURINE. PHNH SUB2 AND HGCL SUB2 WITH I GAVE 77PERCENT 6,ANILINOPURINE, M. 284-6DEGREES, WHILE RHO-CHLORDANILINE GAVE 6,(RHO,CHLORDANILINO) PURINE, M. 317-19DEGREES. I AG SALT AND ACCL IN C SUB6 H SUB6 GAVE THE 9,AC DERIV. OF I, M. 134-6DEGREES, WHICH WITH PHNH SUB2 3 HR AT 110DEGREES GAVE 45PERCENT 6,ANILIO, 9,ACETYPURINE, M. 271-2DEGREES, WHILE HOLDING WITH AQ. MENH SUB2 2 HR GAVE 71PERCENT 6,METHYLAMINO,9,ACETYPURINE, M. 219-21DEGREES. S, METHYL,6,METHYL,2,THIOURACIL AND HGCL SUB2 TREATED WITH BUOH IN THE PRESENCE OF PRIDINE 6 HR AT REFLUX GAVE 37PERCENT 2,BUTOXY,4, HYDROXY,6,METHYLPYRIMIDINE, M. 87-8DEGREES, WHICH WITH AQ. HCL GAVE 6,METHYLURACIL. SIMILARLY, S,METHYL,2,THIOURACIL GAVE 2, BUTOXY,4,HYDROXYPYRIMIDINE, M. 85-6DEGREES. THUS, HGCL SUB2 CATALYZES AMINATION OF I AND ALCOHOLYSIS OF S-ME THIOURACILS. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 62-52(047/1)

GRADETSKIY V. G., DMITRIYEV, V. N., KOGAN, I. Sh.

"Status and Prospects for Development of Acoustical-Pneumatic Control Systems"

Pnevmatich. Pribody i Sistemy upr. [Pneumatic Drives and Control Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 245-249 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, 1971, Abstract No 11 A17 from the Resume).

Translation: Results are presented from studies of physical phenomena in turbulent acoustical-pneumatic convertors (APC), demonstrating that APC can operate not only as discrete, but also as analog convertors. Existing APC designs and prospective areas of their application are studied. 3 Figures; 19 Biblio. Refs.

1/1

USSR

UDC 620.179.16

VERBUKH, I. I., and GRADINAR, V. V., All-Union Scientific Research Institute
of Nondestructive Testing

"Testing the Strength Properties of Composite Materials "

Sverdlovsk, Defektoskopiya, No 3, 1973, pp 12-15

Abstract: The method of acoustical emission was employed to study glued joints and their strength in bimetallic materials. Layer materials were jointed with type VS-10T cement. The materials were titanium and steel joined by explosive forming using the cement. Certain parameters (incomplete polymerization of the cement, increase of seam width, creation of a porous seam, and weak adhesion bonding) were varied for testing. To determine shear strength, the acoustical emission pulses were measured for varying applied load. From this, shear strength was determined and it was found that the number of pulses increases with increasing load up to a load of 2500 kg, after which it drops off. From this study it was determined that the method of acoustical emission can be used as a means of determining the proper heat treatment for bimetallic materials to obtain the maximum shear strength. Three figures, two table, and three bibliographic references.

1/1

- 4 -

USSR

Svirskiy, L. D., Khzmkhot'ko, A. F., Moscow, Zashchita Metallov, Vol 9, No 3,
Jul-Aug 73, pp 482-484.

upon transition from Li to K, while the effective charge and bond strength
with oxygen decrease.

2/2

UDC 620.179

USSR

AVERBUKH, I. I., VAYNBERG, V. YE., CHEGORINSKAYA, O. N.,
GRADINAR, V. V., All-Union Scientific Research Institute of
Nondestructive Control, Kishinev

"The Use of Ultrasonic Emission in Nondestructive Control"

Sverdlovsk, Defektoskopiya, No 1, 1972, pp 26-32

Abstract: An experimental investigation was made of the possibility of using ultrasonic emission for the detection of defective parts of welded constructions and determining the bonding strength of bimetallic sheets and strips. The frequency spectrum and the character of the increase in the emission intensity make it possible to evaluate the characteristics of the material. In supersonic emission investigations, difficulties arise which are connected with the reception and separation of signals of supersonic emission on the noise background. Tuning out from acoustic low-frequency noises is done by appropriate selection of transducers and electronic equipment. 9 illustrations, 7 bibliographic references

1/1

USSR

UDC 621.373.5.001.5:621.382.23.011.222

ALADINSKIY, V. K., GRADINAROV, P. G.

"Output Characteristics of a Tunnel-Drift Diode"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 376-380

Abstract: It has already been indicated [V. K. Aladinskiy, Fizika i tekhnika poluprovodnikov, No 2, 617, 1968; V. K. Aladinskiy, et al., Fizika i tekhnika poluprovodnikov, No 4, 1328, 1970] that along with Gunn diodes, diodes can be used as solid state generators in which the high frequency generation is caused by the tunnel effect or a combination of it with impact ionization. An estimate of the efficiency of such a tunnel-drift diode is made here. The output power can reach 10^6 - 10^5 watts/cm² for a resonator with a high Q-factor in the submillimeter and millimeter wave ranges. The efficiency depends on the electric field distribution in the diode structure and its geometry. For optimal conditions it is 10 percent.

1/1

- 101 -

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--TASHKENT ASTRONOMERS OBTAIN CLEAR PHOTOS OF JOHN BENNET'S COMET -U-
AUTHOR--GRADKOV, N.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, PRAVDA, 3 APRIL 1970, P 6
DATE PUBLISHED--08APR70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--COMET, ASTROGRAPH, TRACKING TELESCOPE, PHOTOGRAPHIC ASTRONOMY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0975

STEP NO--UR/9012/70/000/000/0006/0006

CIRC ACCESSION NO--AN0107496

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0107496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR SEVERAL DAYS THE INHABITANTS OF TASHKENT HAVE BEEN ABLE TO OBSERVE CLEARLY JOHN BENNET'S COMET IN THE NORTHEASTERN PART OF THE MORNING SKY. TASHKENT SCIENTISTS A. LATYPOV AND YU. IVANOV OBTAINED RARE PHOTOGRAPHS OF THE NUCLEUS OF THE COMET AND ITS LONG BRIGHT TAIL. THE PHOTOGRAPHS WERE MADE WITH THE AID OF AN ASTROGRAPH AND TELESCOPES DESIGNED FOR OBSERVING ARTIFICIAL EARTH SATELLITES.

UNCLASSIFIED

USSR

GRADOSEL'SKIY, V. V., Yadernoye, khimicheskoye, i bakteriologicheskoye oruzhiye i zashchita ot nego (Nuclear, Chemical and Bacteriological Weapons and Protection From Them), Moscow, Izdatel'stvo DOSAAF, 1970, 109 pp.

Abstract: This book is written from foreign (non-Soviet) press reports and contains no new information. It is intended for their instruction of youths of premilitary age. The section on nuclear weapons covers half the pamphlet. The chemical munitions pictured are from the US stockpile. The biological agents mentioned are: scrub typhus, Rocky Mountain spotted fever, Q fever, plague, cholera, anthrax, tularemia, brucellosis, psittacosis, encephalitis, glanders, smallpox, and botulism and unspecified fungi and toxins.

1/1

USSR

UDC 533.951.7/.8

GRADOV, O. M., MARKEYEV, B. M.

"Quasilinear Theory of Low-Frequency Instability of a Plasma Placed in a Weak SHF Electrical Field"

Vestn. Mosk. Un-ta. Fiz., Astron. [Moscow University Herald, Physics, Astronomy], Vol 13, No 3, 1972, pp 316-323, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B191 by L. M. Baltich).

Translation: A quasilinear theory of a plasma with collisions, placed in a weak, homogeneous, superhigh frequency electric field, is developed. It is assumed that the oscillations of electrons $V_E = eE_0/m_e\omega_0$ are slight in comparison with their thermal velocity $V_{Te} = (T_e/m_e)^{1/2}$, i.e., $V_E \ll V_{Te}$, but frequency ω_0 is near the electron Langmuir frequency $\omega_{Le} = (4\pi e^2 n_e/m_e)^{1/2}$ and significantly greater than the frequency of collisions of charged particles $\nu_{\alpha n}$ ($\alpha = e, i$). Collisions are considered by means of the Boltzman collision integral. Both quasilinear equations for the distribution function and the corresponding system of equations for moment are produced for cases when the distribution functions are near Maxwellian.

1/2

USSR

UDC 533.951.7/.8

GRADOV, O. M., MARKEYEV, B. M., Vestn. Mosk. Un-ta. Fiz., Astron., Vol 13, No 3, 1972, pp 316-323.

In contrast to the ordinary system of moment equations, the present system of quasilinear equations requires no break for its solution, since, due to averaging, the equation for each moment does not include moments of higher orders. The quasilinear equations produced for a plasma with collisions in a superhigh frequency field are applicable in principle to the study of potential oscillations in a collisionless and strongly ionized plasma as well, and in this sense are general in nature. Conditions of applicability of the theory developed are studied. The dynamics of development of ion-sonic dissipative instability and its influence on the state of the plasma are studied within the framework of the quasilinear approximation. 5 Biblio. Refs.

2/2

- 161 -

172 031 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--PARAMETRIC EXCITATION OF POTENTIAL WAVES IN A COMPLETELY IONIZED
PLASMA NEAR ELECTRON CYCLOTRON RESONANCE -U-
AUTHOR-(02)-GRADOV, U.M., ZYUNDER, D.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 3, PP 979-988
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CYCLOTRON RESONANCE, PLASMA OSCILLATION, PLASMA STABILITY,
KINETIC THEORY, ULTRAHIGH FREQUENCY, ELECTRIC FIELD, CONSTANT MAGNETIC
FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1977/0004

STEP NO--UR/0056/70/058/003/0979/0988

GIRC ACCESSION NO--AP0043604

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0043604

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARAMETRIC EXCITATION OF POTENTIAL OSCILLATIONS IN A COMPLETELY IONIZED PLASMA LOCATED IN A WEAK U.H.F. ELECTRIC AND STATIONARY MAGNETIC FIELDS IS CONSIDERED WITHIN THE FRAMEWORK OF THE KINETIC THEORY. A DISPERSION EQUATION IS DERIVED FOR DETERMINING THE POTENTIAL OSCILLATION SPECTRUM ON BASIS OF THE KINETIC EQUATION CONTAINING A LANDAU COLLISION INTEGRAL. PARAMETRIC EXCITATION OF WAVES PROPAGATING ALMOST ALONG THE MAGNETIC FIELD IS INVESTIGATED FOR THE CASE WHEN THE EXTERNAL U.H.F. FIELD FREQUENCY Ω IS CLOSE TO THE ELECTRON CYCLOTRON FREQUENCY Ω_{ce} . THRESHOLD VALUES OF THE U.H.F. FIELD STRENGTH ARE FOUND ABOVE WHICH THE PLASMA IS UNSTABLE WITH RESPECT TO POTENTIAL OSCILLATION BUILD UP. IT IS SHOWN THAT DEPENDING ON THE PLASMA PARAMETERS, A STATIONARY MAGNETIC FIELD MAY EXERT A STABILIZING AS WELL AS AN UNSTABILIZING EFFECT ON THE INSTABILITIES. A QUALITATIVE COMPARISON WITH AVAILABLE EXPERIMENTAL DATA IS MADE AND AGREEMENT WITH THE THEORETICAL PREDICTIONS IS FOUND.

UNCLASSIFIED

USSR

BONDAROVSKAYA, Ye. A., PRIGOROVA, Ye. D., and GELDSKOVA, N. ...

"Determining Micro-Mixtures of Aluminum in Silane Chlorides"

Moscow, Savodskaya laboratoriya, No. 5, 1971, pp 539-540

Abstract: The silane chlorides with which this paper is concerned are the initial product of the synthesis of organic silicon compounds, which often contain an aluminum chloride impurity that lowers the quality of the final product. The process described involves precipitating the impurity, or micro-mixture, from the basic material and then determining the aluminum content from photometric spectroscopy. The reagent used for detecting the aluminum was S chromazurol, and the instrument used for the spectroscopic examination was the SF-10 spectrophotometer. Curves for the absorption spectra of S chromazurol and its complex with aluminum are plotted.

1/1

USSR

UDC 621.039.53.001.5

GRADUSOV, G. N., GUMILEVA, M. G.

"Methodological Characteristics of a Laboratory Study of the Interaction of Structural Materials With Aqueous Coolant at High Parameters"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, No. 126, pp 52-58 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.145)

Translation: The interaction of structural materials with an aqueous coolant and the mechanism of processes occurring on the surface of various alloys in contact with the aqueous medium at high parameters were investigated, and their behavior under actual conditions was predicted. Studies conducted over many years concerning the interaction of aluminum and zirconium alloys with high-parameter aqueous coolants showed that comparable and reproducible results are obtained in installations of different types if the technique given is strictly observed, whereas any deviations from the technique cause a sharp change in the research results. 2 ref.

1/1

- 51 -

1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--AN INSTALLATION OF CARRYING OUT CORROSION TESTS WITH STATIC
CONDITIONS IN THE HYPERCRITICAL RANGE -U-
AUTHOR-(02)-GRADUSOV, G.N., GUMILEVA, M.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKL. NAUCHNO-TEKHN. KONFERENTSII PO ITOGAM NAUCHNO,
REFERENCE--REFERATIVNYY ZHURNAL, TEKHNLOGIYA MASHINOSTROYSINIYA, NO 12,
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--TEST METHOD, HIGH PRESSURE EFFECT, HIGH TEMPERATURE EFFECT,
CORROSION RATE, STEAM BOILER, CORROSION R AND D, ELECTRIC POWER PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/1880

STEP NO--UR/0000/69/000/000/0028/0032

CIRC ACCESSION NO--AR0053027

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AR0053027

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A REPORT IS MADE ON THE DEVELOPMENT OF AN EXPERIMENTAL INSTALLATION WHICH PERMITS TESTS OF STRUCTURAL MATERIALS TO BE CONDUCTED IN STATIC CONDITIONS WITHIN A BROAD INTERVAL OF TEMPERATURES AND PRESSURES. IT IS DESIGNED FOR THE POSSIBILITY OF OPERATING IN THE HYPERCRITICAL RANGE AT A PRESSURE OF 250 ATMOSPHERES AND A TEMPERATURE OF UP TO 550DEGREESC, BUT MAY ALSO BE USED IN TESTING SAMPLES IN THE SUBCRITICAL RANGE, IN SUPERHEATED STEAM AS WELL AS IN BOILING WATER. THE INSTALLATION CONSISTS OF THREE CONSECUTIVELY ENGAGED BASIC ELEMENTS: AN AUTOCLAVE, A STEAM GENERATOR, AND A MULTIPLIER. THE STRUCTURE OF ITS INDIVIDUAL SUBASSEMBLIES IS DESCRIBED IN DETAIL, AND SO IS THE METHOD OF CONDUCTING CORROSION TESTS. THE INSTALLATION HAS BEEN REGULARLY USED SINCE 1966 FOR THE CONDUCT OF LONG TERM CORROSION TEST. ANALYSES OF THE OPERATING CONDITIONS SHOWED THAT THE PRESSURE FLUCTUATIONS DO NOT EXCEED PLUS OR MINUS 5 ATMOSPHERES AND THE TEMPERATURE FLUCTUATIONS DO NOT EXCEED PLUS OR MINUS 5DEGREESC.

UNCLASSIFIED

USSR

UDC 669.71.48(088.8)

BELETSKIY, G. V., GRAFAS, N. I., KHORYAK, A. K., SHAGALOVA, B. Yu.,
SHAFARENKO, A.I., and ZVEREV, S. N.

"Device for Extraction of Non-Oxidized Metal From Hot Furnace Skim"

USSR Author's Certificate No 266213, Filed 17/06/68, Published 24/07/70,
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G172 P)

Translation: A device for the extraction of non-oxidized metals from hot
furnace skim formed during melting of secondary aluminum alloys is presented.
It consists of a cylindrical container with a perforated floor equipped with
a mixer located inside the container and rigidly fastened to a vertical
shaft. To allow rotation of the floor, it is freely supported on a hori-
zontal, eccentric axis fastened to the walls of the cylindrical container
and connected to a vertical member passing through the vertical shaft,
which is made hollow, so that it can move.

1/1

- 2 -

USSR

UDC 669.71.042.6

GRAFMAN, Z. I., TOKAREV, ZH. V.

"Effect of the Structural Design of the Pouring Gate System on the Formation of Pores in Castings Made of AL9 Alloy When Feeding the Metal from the Bottom"

Usadochn. protessy v splavakh i otliivkakh -- V sb. (Shrinkage Processes in Alloys and Castings -- collection of works), Kiev, Naukova Dumka Press, 1970, pp 308-310 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G186)

Translation: A method and results of studying the effect of the structural design of the pouring gate system on the formation of defects of a shrinkage origin when feeding the metal into the mold from the bottom are presented. Recommendations are developed for selecting the structural designs of pouring gate systems corresponding to obtaining tight castings from alloys based on aluminum.

1/1

Radiobiology

USSR

UDC 616-001.28-036.8-07:616.831-005-073.7.311

GLAZUNOV, I. S., GRAFOV, A. A., IVANOV, V. A., and BRYZHAKHIN, G. B.

"Cerebral Circulation in Man Afflicted With Acute Radiation Sickness"

Moscow, Meditsinskaya Radiologiya, Vol 16, No 3, Mar 71, pp 53-59

Abstract: Data are presented on the state of circulation and tonus of the cerebral vessels in 10 patients afflicted with acute radiation sickness in the moderate and severe stage. The observations were made 5-12 years from the onset of the disease. Acute illness emerged in these subjects as a result of a single dose of gamma-rays and neutrons in a total amount of 270 to 980 rem. Duration of the exposure varied from 1 sec to 20 min. The patients were 30-49 years of age during the study. Rheoencephalography and orbital plethysmography were used in combination with an appropriate somato-neurological examination. It was established that the dose of ionizing radiation and in connection with it the severity of the illness affect the cerebral circulation. The more severe the illness is, the most pronounced is the drop in regional or zonal blood circulation at some time after start of the illness. Data from orbital plethysmography showed that the volume pulse of the eye which characterizes the state of the tonus of the eye arteries was $16.1 \pm 8.6 \text{ mm}^3$ for the patients afflicted with acute radiation

1/2

USSR

GLAZUNOV, I. S., et al., Meditsinskaya Radiologiya, Vol 16, No 3, Mar 71,
pp 53-59

sickness of moderate degree and $-5.1 \pm 1.6 \text{ mm}^3$ for the patients suffering from acute serious radiation sickness. The results obtained indicated that the adhesive-elastic properties of the cerebral vessels are enhanced with subsequently developing chronic vascular insufficiency. The neurological state of the patients included general symptoms of cerebral disorders such as headache, oculovestibular vertigo, as well as signs of microorganic disturbances of the central nervous system (nystagmus, reflexes of oral automatism, mild pyramid insufficiency). From the general physiological aspects, the data obtained indicated a premature aging of the body taking place as a result of acute radiation sickness. These signs included premature greying of the hair, a sharp decline in the libido, trophic skin disorders, and hardening of the crystalline lenses with development of radiation cataracts.

2/2

- 24 -

UDC: 681.332.65

USSR

SOKOLOV, L. A., GRAFOV, B. M., MIDLER, V. M., Institute of Electrochemistry,
Academy of Sciences of the USSR

"An Electrical VLF Filter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 24, 1970, Soviet Patent No 277412, Class 42, Filed 12 April 1969, p 133

Abstract: This Author's Certificate introduces an electrical VLF filter based on an electrochemical oxidation-reduction system. The filter is made in the form of a channel with continuous hydrodynamic flow of an electrolyte in which spaced electrodes lie in the direction of the flow. As a distinguishing feature of the patent, a signal with a definite, very low frequency is isolated by spacing the input electrodes by a distance equal to the product of the flow rate and the period of the signal to be isolated, while the output electrodes are separated by half this distance.

1/1

1/3 020 UNCLASSIFIED PROCESSING DATE--0906170
TITLE--FIRST TESTS OF ELECTROCHEMICAL SEISMIC DETECTORS -U-
AUTHOR--(04)-GALPERIN, YE.I., GRAFOV, B.M., LUKOVETS, P.D., NOVITSKIY, M.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ZEMLI, NO 2, 1970, PP
81-87
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMOLOGIC INSTRUMENT, OSCILLATION, ELECTROCHEMICAL PROPERTY,
BOREHOLE, SEISMIC SOUNDING, SEISMIC REFLECTION, SEISMIC REFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0729

STEP NO--UR/0387/70/000/002/0081/0087

CIRC ACCESSION NO--AP0110456

UNCLASSIFIED

2/3 020

UNCLASSIFIED

PROCESSING DATE--0900170

CIRC ACCESSION NO--AP0110458

ABSTRACT/EXTRACT--(U) GP-3- ABSTRACT. SINCE THE SPRING OF 1965 THE INSTITUTE OF PHYSICS OF THE EARTH AND INSTITUTE OF ELECTROCHEMISTRY HAVE ENGAGED IN JOINT EXPERIMENTAL WORK FOR EVALUATING THE POSSIBILITIES OF USING ELECTROCHEMICAL CONVERTERS FOR REGISTERING SEISMIC OSCILLATIONS. IT IS EMPHASIZED THAT ONLY THE FIRST STEPS IN THIS DIRECTION HAVE BEEN TAKEN, ALTHOUGH THE POSSIBILITIES ARE CLEAR. THE ELECTROCHEMICAL SEISMIC DETECTOR HAS A SOLID HOUSING WHICH HOLDS A SENSING ELEMENT, CONSTITUTING AN ELECTROCHEMICAL CONVERTER. IT CONSISTS OF A CYLINDRICAL PLASTIC CONTAINER TO WHOSE OPPOSITE SIDES ELASTIC MEMBRANES ARE ATTACHED. WITHIN THE SENSOR THERE IS A PARTITION WITH AN OPENING WHICH DIVIDES IT INTO TWO CHAMBERS. THE SENSOR IS FILLED WITH AN ELECTROLYTE WHICH TOGETHER WITH THE MEMBRANE AND THE CHANNEL FORMS A MECHANICAL OSCILLATORY SYSTEM. PLATINUM GRID ELECTRODES ARE INSERTED IN THE CHANNEL. THE ELECTRODES TOGETHER WITH THE ELECTROLYTE CONSTITUTE A REDOX SYSTEM. THE ELECTROCHEMICAL SEISMIC DETECTOR USED IN THE EXPERIMENTS IS A CYLINDER 40 MM IN LENGTH AND 30 MM IN DIAMETER AND WEIGHS ABOUT 70 G. THE SENSOR IS PARAMETRIC. IN THE ABSENCE OF A USEFUL SIGNAL A D-C CURRENT FLOWS THROUGH IT. WITH THE APPEARANCE OF FORCED OSCILLATIONS THE SENSOR HOUSING TOGETHER WITH THE ELECTRODES OSCILLATES RELATIVE TO THE FLUID IN THE CHANNEL AND A VARIABLE COMPONENT, WHOSE FREQUENCY IS EQUAL TO THE FREQUENCY OF THE FORCED OSCILLATIONS, AND WHOSE AMPLITUDE IS PROPORTIONAL TO THE AMPLITUDE OF THE FORCED OSCILLATIONS, APPEARS IN THE SENSOR CIRCUIT.

UNCLASSIFIED

3/3 020

UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0110456

ABSTRACT/EXTRACT--FIELD EXPERIMENTS ARE DESCRIBED (REGISTERING NEARBY IMPACTS, USE IN THE REFLECTED WAVES, REFRACTED WAVES AND DEEP SEISMIC SOUNDING METHODS, REGISTERING EARTHQUAKES). IT WAS FOUND THAT IN ALL CASES WHEN REGISTERING EXPLOSIONS AT DIFFERENT DISTANCES AND WHEN REGISTERING EARTHQUAKES THE ELECTROCHEMICAL SEISMIC DETECTORS HAD A GREATER RESPONSE THAN THE ELECTRODYNAMIC INSTRUMENTS. THE FREQUENCY CHARACTERISTIC OF THE TESTED ELECTROCHEMICAL DETECTORS IS CLOSE TO THE CHARACTERISTIC OF AN ELECTRODYNAMIC DETECTOR WITH A CHARACTERISTIC FREQUENCY OF 1 CPS. THE SMALL SIZE AND WEIGHT OF THE ELECTROCHEMICAL SEISMIC DETECTOR AFFORD GREAT POSSIBILITIES FOR INCREASING RESPONSE OF THE ENTIRE APPARATUS AND CHANGING OBSERVATIONAL TECHNIQUES. IN PARTICULAR, THERE CAN BE AN INCREASE IN INSTRUMENT RESPONSE BY LOWERING IT INTO DEEP BOREHOLES. IT IS CLEAR THAT ELECTROCHEMICAL DETECTORS IN THE FUTURE WILL BE USED EXTENSIVELY IN SEISMIC OBSERVATIONS, BUT ONLY AFTER MANY PROBLEMS ARE SOLVED. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH. FACILITY: INSTITUTE OF ELECTROCHEMISTRY.

UNCLASSIFIED

Converters

USSR

UDC 621.314.14

GRAFOV, V.P., KOLOMIYETS, V.D., TOLSTOUKHOV, A.S., USIKOV, V.A.

"On The Principles Of Construction Of A Static Converter Using Semiconductor Devices"

Vestn. Kiyev. politekhn. in-ta. Ser. radioelektron. (Bulletin Of The Kiev Polytechnical Institute. Radioelectronics Series), 1970, No 7, pp 106-108 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B460)

Translation: The main possibilities are considered for construction of the circuits of autonomous inverters, which include a device for regulation of current or voltage, filters, systems for protection, monitoring, etc. Various combinations are compared of electronic and electromagnetic elements in different functional units of the circuit. At present the most common is the synthesized electronic and electromagnetic construction of static transistorized converters. 1 table. I.A.

1/1

USSR

UDC: 621.372.061

VETYUGOV, A. I. and GRAFUTKO, B. V.

"Experimental Research of Radio-Frequency Filters with Spiral Resonators"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 13, No. 10, pp 1264-1265

Abstract: The filters discussed in this article are used for tuning high-Q filters in the 30-300 MHz range, and consist basically of spiral resonators making up parts of quarter-wave short-circuited coaxial lines. The experiments were performed on double-resonator spiral filters with a mean frequency of 104 MHz, with an input and output impedance of 50 ohms each. The computations of the resonators were approximate and made with nomograms devised from theoretical formulas. The filter band pass at critical coupling of the resonators was 0.4 MHz on the 3 db level, and 1.6 MHz on the 35 db level.

1/1

USSR

UDC 615.281.5.035.4:616.988.75-036.8

AKSENOV, V. A., SELIDOVKIN, D. A., GLADKIKH, G. N., GRAKHOVA, A. G., BOGDANOVA, N. S., and PERSHIN, G. N., Ministry of Health USSR, and All Union Scientific Research Chemicopharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Evaluation of the Prophylactic Effectiveness of the New Soviet Antiviral Agent Oxoline During the 1969 Influenza Epidemic"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 6, Nov/Dec 70, pp 726-733

Abstract: Oxoline, a polyox compound of the naphthalene series, is a virucidal drug with selective activity against influenza virus and a local action. It is effective in the treatment of virus infections of the eyes and skin, and relieves the symptoms of influenza in patients on application in the nasal and pharyngeal cavities. Its effectiveness as an influenza preventive was studied during the 1969 epidemic caused by the A2 virus. Tests were carried out on 9,600 children 1-7 years old in two cities. Oxoline was applied twice a day for 25 days on the mucosa of the nose in the form of an 0.25-0.5% vaseline ointment, using 0.3-0.5 g ointment per child per day. The coefficient of effectiveness in preventing influenza was 1.7, corresponding to a reduction of the incidence of influenza by 43% over the controls. The frequency of side effects was 0.6 and 0.9% for the 0.25 and 1/2

USSR

AKSENOV, V. A., et al, Farmakologiya i Toksikologiya, Vol 33, No 6, Nov/Dec 70, pp 726-733

and 0.5% ointment, respectively. The 0.25% ointment was as effective as the 0.5% ointment. The effectiveness coefficient was the same for children 1-3 years and 4-7 years old, a fact which indicated that oxoline produces a barrier effect, preventing entrance of the infection into the organism through the nasal mucosa, and is not resorbed into the blood. Prophylactic treatment with oxoline alleviated the clinical course of influenza when infection did occur and shortened the duration of the disease.

2/2

USSR

UDC 621.791.85.037

GRAKUN, V. F., KRAVCHUK, L. A., MOROZENKO, L. N., KRYSHTAB, G. S.
(deceased)

"Electron Gun for Microwelding and Micromachining"

Kiev, Avtomaticheskaya Svarka, No 4, Apr 70, pp 72-73

Abstract: The article describes an electron gun developed at the Institute of Electric Welding imeni Ye. O. Paton for electron-beam microwelding and micromachining with a ~ 50 -kv accelerating voltage and a beam current of up to 5 mA. The gun is comparatively simple, inexpensive, and reliable, and is suitable for both laboratory research and industrial use. An electron optic system is used with a triode electron projector, one electromagnetic lens, and a deflection system. The electron projector has an all-soldered case with a glass insulator. The electron optic system is protected by a case, which assures firm attachment of the high-voltage cable and its flexible connection with the projector, biological shielding of the operator, electro-interlocks, and convenient access to the cathode assembly of

1/2

USSR

GRAKUN, V. F., et al., Avtomaticeskaya Svarka, No 4, Apr 70,
pp 72-73

the electron projector. Such a gun design makes it possible
to dispense with additional adjusting devices, bushings, and
a vacuum-tight metal case. The article includes a drawing of
the electron gun.

2/2

7366

CSO: 1842-W (97 pages)

- END -

- 01 -

USSR

UDC 621.315.592

GRANATSKIY, V. I., KARAMAN, M. I., IUSHTINSKIY, V. P.

"Optical Absorption of Gallium Monotelluride"

Leningrad, *Fizika i Tekhnika Poluprovodnikov*, Vol 6, No 3, 1972, pp 550-552

Abstract: Results are presented from a detailed investigation of the absorption edge by measuring the transmission from which the width of the forbidden band (E_g), the binding energy of the excitons (G) and other parameters of GaTe are determined. The temperature dependence of the exciton band $n = 1$ was also investigated. The absorption spectra of GaTe and the isoabsorption lines are presented. The plotted data show that the absorption coefficient in the long wave region of the edge of the band ($n = 1$) is satisfactorily described by the exponential function

$$K = K_0 \exp \left[- \frac{\sigma(h\nu_0 - h\nu)}{kT} \right],$$

where K_0 and $h\nu_0$ are constants which are equal to $8.7 \cdot 10^9 \text{ cm}^{-1}$ and 1.637 electron volts respectively, σ is a dimensionless parameter characterizing the slope of the straight line $\lg K$. The isoabsorption curves for various values $1/2$

USSR

GRAMATSKIY, V. I., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 550-552

of K from the long wave segment of the band indicate good convergence at the point $h\nu_0$. The parameter σ_0 is related to the exciton-phonon interaction constant g by the expression $\sigma_0 = 2g^{-1}/3$, from which the magnitude of the exciton-phonon coupling is 0.27. This indicates the weak nature of the exciton-phonon interaction in gallium telluride.

2/2

- 134 -

USSR

UDC: 621.373:530.145.6

GRAMBLATOV, V. M., TESELKIN, V. V.

~~"A highly reflective plate with coupling apertures as a frequency selector in a laser cavity"~~

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific and Technical Collection. Gas-Discharge Devices), 1970, vyp. 2(18), pp 20-25 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D272)

Translation: An investigation is made into the possibility of using a highly reflective plate with coupling apertures for frequency selection. The method of equivalent long lines is used to analyze the spectrum of an optical cavity in which a coupling plate is located. Data are given from an experimental study of the selective properties of an ionic argon laser cavity in which a highly reflective plate with coupling apertures is located. Resumé.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A NEW METHOD OF STERILIZING SURGICAL GLOVES -U-
AUTHOR--(04)-OSIPYAN, V.I., GRAMENITSKAYA, V.G., SHAPILOV, U.D., SAVINSKIY,
YA.R.
COUNTRY OF INFO--USSR
SOURCE--VOEYNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 77-78
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGICAL EQUIPMENT, MILITARY HOSPITAL, MERCURY COMPOUND,
CHLORIDE, STERILIZATION, BACTERICIDE, BACILLUS ANTHRACIS, BACILLUS
SUBTILIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REL/TRANL--3906/0694

STEP NO--UR/017770/000/003/0077/0078

CIRC ACCESSION NO--AP0134433

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--2008070

CIRC ACCESSION NO--AP0154483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODS OF STERILIZATION OF SURGICAL GLOVES NOW USED IN MEDICAL INSTITUTIONS OF THE ARMY AND NAVY (AUTOCCLAVING, BOILING, AND DIPPING IN MERCURIC CHLORIDE SOLUTION, ETC) HAVE SUBSTANTIAL SHORTCOMINGS. THIS LED US TO SEEK OTHER, MORE EFFECTIVE METHODS OF STERILIZATION. IN THE COURSE OF 1967-1968 WE CONDUCTED INVESTIGATIONS TO DETERMINE THE POSSIBILITY OF USING FOR THE STERILIZATION OF SURGICAL GLOVES CERTAIN HYDROPEROXIDE PRESCRIPTIONS BASED ON ALKALIZING OR ACYLATING AGENTS. STUDY OF THE MICROBICIDAL AND DISINFECTING ACTION OF PRESCRIPTIONS CONTAINING HYDROGEN PEROXIDE AND ONE OF THE ACYLATING AGENTS (ACETIC ANHYDRIDE, MONOCHLOROACETIC, FORMIC, BENZOIC, ACETIC, PROPIONIC AND OTHER ACIDS) SHOWED THAT IN ITS COMPLEX OF PROPERTIES THE MOST RATIONAL IS A SYSTEM CONTAINING 30PERCENT PEROXYDOL AND FORMIC ACID SOLUTION, CALLED PREPARATION 2-4 BY US. THE PEROXYDOL ACID FORMING AS A RESULT OF THE REACTION OF THOSE COMPONENTS HAS A LETHAL EFFECT ON MICROBES. SOLUTIONS OF PREPARATION 5-4 (2.4-4.8PERCENT) HAVE A BROAD SPECTRUM OF BACTERICIDAL ACTION AND ASSURE THE DEATH OF SPORES OF BAC. ANTHRACIS, BAC. ANTHRACIDIS AND BAC. SUBTILIS IN THE FIRST FIVE OR TEN MINUTES.

UNCLASSIFIED

Microbiology

UDC 612.544-06:576.851.252.097.29

USSR

GRAMENTITSKAYA, Ye. S. and KALININA, N. A., Department of General Pathology, Institute of Experimental Medicine, Academy of Medical Sciences SSSR, Leningrad

"Mechanism of Action of Staphylococcus Toxin on the Heat Exchange of the Organism"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/June 70, pp 65-66

Translation: It has been shown in previous work that in cases of chronic diphtheria intoxication, a discrepancy in the data of direct and indirect calorimetry (with a predominance of actual heat production) is observed. Introduction of minimal doses of diphtheria toxin (DT) into the lateral ventricle of the brain also caused a breakdown in overall metabolism and in the metabolism of liver mitochondria, which are typical for diphtheria intoxication.

Since staphylococcus toxin, when administered intravenously, also produces intensified heat production, which is inadequate according to the calculated oxygen requirement, it was of interest to examine how intraventricular introduction of this toxin would affect metabolism when any peripheral action was excluded.

Method. A total of 45 calorimetric tests were run on rabbits weighing 2.6-3 kg. Staphylococcus toxin was intravenously administered in a dose of 0.1 ml/kg. For intracerebral administration, the rabbits were first given a cannula in the

1/3

USSR

GRAMENITSKAYA, Ye. S. and KALININA, N. A., *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, No 3, May/Jun 70, pp 65-66

lateral ventricle. In this case, the toxin was administered in amounts of 0.01 ml in a volume of 0.1 cm³, diluted with 0.3% physiological saline.

Rectal temperature was measured with an electrothermometer, with the probe inserted 3 cm into the rectum or in a calorimeter with a thermocouple. Heat exchange was determined in a calorimeter of the LIIMO system. The overall gas volume was determined according to Pashutin.

Results and Discussion. As in previous studies in our laboratory, the body temperature rose within 15-30 min of intravenous administration of staphylococcus toxin. The maximum rise was achieved within 3-4 hours (an average of 1.3°). When the toxin was administered intracerebrally, within the first 1.5 hours (on the average), a slight drop in body temperature was observed (on the average of 0.3°) which was followed by an average increase of 1°C.

Study of heat exchange in animals after intravenous administration of staphylococcus toxin confirmed that together with the temperature effect, a sufficiently pronounced excess ($p < 0.05$) of actual heat production takes place beyond the one calculated according to the required oxygen. With intracerebral administration of the toxin, no significant differences were observed in the direct and indirect heat

USSR

GRAMENITSKAYA, Ye. S., and KALININA, N. A., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 70, pp 65-66

measurement.

Thus, it is clear that, contrary to the effect of diphtherin toxin, during intoxication with Staphylococcus toxin, the direct effect of the toxin on paraventricular brain structures does not play an essential role in the development of excess heat production with respect to the level of gas exchange. The observed disturbances in heat exchange when the toxin is administered intravenously are a result of apparently one or another peripheral mechanism.

The development of initial hypothermia upon intracerebral administration of Staphylococcus toxin, which is absent when a number of vaccines purified of bacterial and endogenic pyrogens are introduced by this route, substantiates the assumption of its toxic effect on the temperature-regulating brain structures.

It is possible that this also explains the lag in body temperature rise when the toxin is administered in this manner. Nevertheless, it is impossible to exclude completely intermediate mechanisms (for instance, a leukocyte reaction) in the development of fever during the local effect of Staphylococcus toxin on the brain. This problem requires further study.

3/3

1/2 037 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ENERGY AND HEAT EXCHANGE IN MUSCLES AT DIPHTHERIC INTOXICATION -U-
AUTHOR--(02)-NISELOVSKAYA, L.I., GRAMENITSKAYA, YE.S.
COUNTRY OF INFO--USSR
SOURCE--VOПРОSY МЕДИЦИНСКОЙ ХИМИИ, 1970, VOL 16, NR 3, PP 266-268
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MUSCLE PHYSIOLOGY, HEAT EXCHANGE, RABBIT, PHOSPHORYLATION,
CALORIMETRY, DIPHTHERIA, MITOCHONDRIA, TOXIN

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0266 STEP NO--UK/0301/70/016/003/0266/0266
CIRC ACCESSION NO--AP0120956
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120956

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE STUDY OF ENERGY EXCHANGE IN MUSCLES AT DIPHTHERIC INTOXICATION IN RABBITS THE EXTENT OF OXIDATIVE PHOSPHORYLATION (P,O) AND HEAT PRODUCTION BY WHOLE ORGANISM WERE DETERMINED. THE HEAT PRODUCTION WAS MEASURED BY MEANS OF DIRECT AND INDIRECT CALORIMETRY. SUBCUTANEOUS AND INTERAVENOUS ADMINISTRATION OF DIPHTHERIC TOXINE DOES NOT EFFECT THE OXIDATIVE PHOSPHORYLATION LEVEL IN MITOCHONDRIA ISOLATED FROM GASTROCNEMIUS MUSCLE OF RABBITS. AT THE SAME TIME SUBCUTANEOUS INJECTION OF TOXINE LEADS TO OVERHEATING OF THE BODY. THEREFORE THE LACK IN OXIDATIVE PHOSPHORYLATION UNCOUPLING IN MUSCLES EXCLUDES THE INVOLVEMENT OF THIS MECHANISM IN OVERHEATING PHENOMENA AT DIPHTHERIC INTOXICATION. FACILITY: THE DEPARTMENT OF BIOCHEMISTRY AND PATHOLOGY INSTITUTE OF EXPERIMENTAL MEDICINE USSR ACADEMY OF MEDICAL SCIENCES.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--TWO PRONG PI POSITIVE P INTERACTIONS AT 2.34 GEV,C -U-

AUTHOR--(05)-ANGELOV, N.S., GRAMENITSKIY, I.M., KANAZIRSKIY, KH.M.,
MOISEYEV, A.M., PROKES, A.
COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 613-28

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MESON INTERACTION, HYDROGEN BUBBLE CHAMBER, PION PROTON
INTERACTION, PION PION INTERACTION, EXCITATION CROSS SECTION, QUANTUM
RESONANCE PHENOMENON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1991/1062

STEP NO--UR/0367/70/011/003/0613/0628

CIRC ACCESSION NO--AP0110752

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110752

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. RESULTS ARE PRESENTED OBTAINED IN THE ANAL. OF 17,000 2-PRONG PI POSITIVE P INTERACTION EVENTS SELECTED FROM 150,000 STEREOPHOTOGRAPHS TAKEN IN A 40-CM LIQ. H CHAMBER IRRADIATED BY A SEPD. BEAM OF 2.34-GEV-C PI POSITIVE MESONS. THE PRODUCTION CROSS SECTIONS AND PARAMETERS ARE DETD. FOR THE P POSITIVE, N POSITIVE POSITIVE SUB1238, AND N POSITIVE 1688 RESONANCES. THE MECHANISM OF THE PRODUCTION OF THESE RESONANCES IS STUDIED IN DETAIL. THE CROSS SECTION OF THE PI POSITIVE PI POSITIVE INTERACTION IS INFERRED FROM THE PI POSITIVE P YIELDS PI POSITIVE PI POSITIVE N REACTION BY THE CHEW LOW METHOD. FACILITY: OB'EDIN. INST. YAD. ISLED., DUBNA, USSR.

UNCLASSIFIED

USSR

UDC: 539.1.074

GRAMMATIKATI, V. S., GRINEV, M. P., YERSHOVA, Z. F., KOZLOV, L. L.,
LITVINOVA, T. G., MIKHAYLOV, L. M., MOLIN, A. A., PANCHENKOV, G. M.

"Color Indicators for Visual Evaluation of Dose During Radiation
Sterilization"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and
Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent,
Fan Press, 1972, pp 113-118 (Translated from Referativnyy Zhurnal
Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.1403),
from the resume.

Translation: It is suggested that a plasticized PVC film containing an acid-
sensitive dye be used as a color dose indicator for the 0.1-5.0 Mrad range.
The sensitivity of indicators to radiation as a function of film composition
and dye used is studied. Color dose indicators are calibrated using the
ferrosulfate method and calorimetry. A method is suggested for instrumental
testing of changes in the color of indicators using spectrophotometry of
irradiated specimens, allowing doses to be measured with errors of 10-12%.
Practical recommendations are presented for the use of color dose indicators
to check radiation sterilization. 2 figures, 1 biblio. ref.

1/1

- 104 -

Acc. Nr.: AN0104243

Ref. Code: UR 9012

JPRS: 49937

Soviets Expect to Reach Upper Mantle With New Drilling Apparatus

(Complete translation: "We Look into the Depths of the Planet." by V. Danilov; Moscow, Pravda, 29 Jan 70, p 6)

Designer V. Gramolin noted that this will be a complex of assemblies with its own electric power station and a number of engines. The power of the main generators will be approximately 10,000 kilowatts. The drilling complex will include a machine room, a special building for pumps, living quarters and a dining room. The tower will be 68 meters tall.

The drill will reach the so-called upper mantle of the earth. Four powerful pumps will feed a special solution into the well and flush out the debris. Scientists and petroleum prospectors will obtain valuable information about the depths of the earth. It is planned to sink the first two wells in Azerbaydshan and on the Kola Peninsula. The engineering project was devised by a group headed by G. Alekseyevskiy. A working design of the drilling apparatus should be ready this year. /4/

Reel/Frame

17870801

Acc. Nr.: AN0104243

The designers at "Uralsmash" /Ural Heavy Machinery Plant/ have completed the engineering design of a drilling apparatus capable of sinking a well to a depth of 15,000 meters. \

Reel/Frame

19870802

USSR

UDC 621.357.3.035.2

GRAMM-OSIPOVA, V. N., and VECHVRA, L. V.

"Electrochemical and Catalytic Reactions of Platinum Copper Electrodes Relative to the Hydrogen Overvoltage"

Nekotoryye problemy kinetiki elektrodovostok, (English Version Above), Topic Books from the Dal'nevost University, Vladivostok, 1972, pp 28-32 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L269 by V. V. Grinina)

Translation: The electrocatalytic and catalytic properties of high-surface-area platinum-copper electrodes for different concentrations of copper were studied as an example of the reduction reaction of maleic acid. It was shown that the relationship of the rate of the electrochemical catalytic reaction was related to the copper content is a singular function and passes through a maximum at 62% copper. The overvoltage of the hydrogen was monotonically related to the concentration of copper. It was assumed that the activity of the platinum-copper precipitates relative to the catalytic and electrochemical reduction for the hydrogen overvoltage was related to the electron structure of the electrode. Both processes actually occur according to the general mechanism.

1/1

- 26 -

Superalloys

USSR

UDC 669.24

GRAN', N. I., ONISHCHEN, B. P., MAYZEL', Ye. I.

"Electric Smelting of Oxidized Nickel Ores"

Elektroplavka Okisleniykh Nikelevykh Rud [English version above], Metallurgiya Press, 1971, 248 pages.

Translation of Annotation: Electric smelting of oxidized nickel ores to ferronickel, low-sulfur alloy and matte is described. A classification of ores and methods of preparation of ores for smelting is presented. The peculiarities of electric smelting of ores are studied. Data are presented on the influence of a number of important factors on the indicators of the process. Information is reported on the physical and thermodynamic properties of ferronickel and slag.

The book is designed for engineers and technicians at metallurgical plants, planning and scientific research institutes, teachers and students at metallurgical and chemical-technological universities and technical schools. 60 Figures; 92 Tables; 145 Biblio. Refs.

TABLE OF CONTENTS

Foreword	5
Chapter I. Oxidized Nickel Ores	7
1/5 Origin of Ores and Classification of Deposits	7

UDC 669.24

USSR

GRAN', N. I., ONISHCHIN, B. P., MAYZEL', Ye. I., Elektroplavka Okisleniykh
Nikelevykh Rud, Metallurgiya Press, 1971, 248 pages.

Commercial Classification, Chemical and Mineral Composition of Ores	14 20
Granulometric Composition and Physical Properties	24
Distribution of Nickel and Cobalt in Oxidized Nickel Ores	26
Characteristics of Ores of Deposits Being Utilized	34
Chapter II. Preparation of Ores for Electric Smelting	34
Methods of Preparation of Ores for Smelting	
Significance of Heating and Reducing Roasting of Ores Before Smelting	35 36
Study of Reduction of Oxidized Nickel Ores	47
Pilot-scale Testing of Reducing Roasting	53
Selective Reducing	55
Chapter III. Electric Smelting to Ferronickel	55
Technological Testing of Ores by Electric Smelting Method	
Pilot-scale Installation, Initial Materials, Technological Mode of Electric Smelting	68 74
Indicators of Electric Smelting of Sinter and Hot Sinter	84
Regulation of Composition of Ferronickel	

2/5

- 53 -

USSR

UDC 669.24

GRAN', N. I., ONISHCHIN, B. P., MAYTEL', Ye. I., Elektroplavka Okisleniykh
Nikel'nykh Rud, Metallurgiya Press, 1971, 248 pages.

Influence of Preliminary Reduction of Sinter on Distribution of Nonferrous Metals Between Alloy and Slag	87
Fluxing During Electric Smelting of Oxidized Nickel Ores	89
Electric Mode	94
Comparison of Electric Smelting Indicators of Domestic Ores with Foreign Data	96
Chapter IV. Stage Process and Electric Smelting to Matte	98
Stage Melting as One Method of Combined Utilization of Ore Raw Material	98
Equipment, Initial Materials and Technological Mode	99
Influence of Individual Factors on Smelting Indicators of Steel Intermediate Product	103
Material and Heat Balance of Melting of Slag to Steel Inter- mediate Product	111
Electric Smelting of Oxidized Nickel Ores to Sulfur Ferronickel and Matte	117
Chapter V. Composition and Physical Properties of Electric Smelting Products	120
Chapter VI. Activity of Components in Ferronickel and Electric 3/5 Furnace Slag	149

USSR	UDC 669.24
GRAN', N. I., ONISHCHIN, B. P., MAYZEL', Ye. I., Elektroplavka Okisleniykh Nikelevykh Rud, Metallurgiya Press, 1971, 248 pages.	
Activity of Silicon, Nickel and Iron in Liquid Ferronickel	150
Activity of Silica and Iron in Electric Furnace Slag Melts	162
Chapter VII. Distribution of Components Between Ferronickel and Slag	168
Distribution of Nickel Between Liquid Phases in Furnace	168
Distribution of Silicon Between Liquid Phases in Furnace	172
Solubility of Carbon in Iron-Nickel Alloys	179
Behavior of Chromium	184
Distribution of Sulfur and Phosphorus	185
Chapter VIII. Foaming of Slag During Electric Smelting	188
The Phenomena of Foaming of Melts and Solutions	188
Study of the Causes and Mechanism of Foaming of Electric Furnace Slags	192
Foaming of Production Slags During Electric Smelting and Means for Eliminating It	206
Chapter IX. Basic Recommendations for Mode of Preparation and Melting of Charge and Requirements for Furnace Design	209
Mode of Roasting and Design of Tube Furnace	209
Requirements for Composition of Ferronickel and Dump Slag	211

4/5

- 54 -

USSR

UDC 669.24

GRAN', N. I., ONISHCHIN, B. P., 'RAYZEL', Ye. I., Elektroplavka Oksidizirovannykh
Nikelovykh Rud, Metallurgiya Press, 1971, 248 pages

Technological Mode of Electric Smelting	213
Electrical Parameters	215
Requirements for Electric Furnace Design	217
Chapter X. Study and Practice of Electric Smelting of Oxidized Nickel	
Ores Abroad	219
Research Work	219
Electric Smelting on the Industrial Scale	228
A Plan for a Plant in the Phillipines	235
Prospects for Development of the Nickel Industry in the Capitalist	
Countries	237
Chapter XI. Processing of Crude Ferronickel to a Commercial Product	238
Bibliography	245

Crystals and Semiconductors

USSR

UDC: 548.33

GRANADCHIKOVA, B. G., SMIRNOVA, N. L., BELOV, N. V., Moscow
State University imeni M. V. Lomonosov

"Polymorphic Transitions in the System of Structural Types
of Elements"

Moscow, Kristallografiya, Vol 17, No 1, Jan/Feb 72, pp 117-130

Abstract: The authors consider family relationships between structural types on the basis of polymorphic transitions of simple substances -- elements. The α -Fe-Cu-Mg triangle lies at the base of the structural system of elements. Transitions from alpha iron to the other two structural types and from the copper type to the magnesium structural type are considered. In spite of gaps due to lack of experimental data, the general scheme fits the picture of the origin of structural types and the relations between them. Five illustrations, bibliography of twelve titles.

1/1